PULP & PAPER

April 1990

Environmental permitting update • 59

...ing strategies ...rOCI • 130, 141

...ucts of hyp... consist-ency pul...ing • 92

Fourdrinier ...abund... boosts quality • 82

0700 27SR 372
SERVICE, INC/CPI
CONGRESSIONAL INFORMATION
4520 EAST WEST HWY
BETHESDA MD 20814

Volume 64
Number 4

APRIL

FOCUS: FORMING

Forming design decisions 79
Newest multi-wire machine configurations and fabrics must be considered for mills that manufacture packaging grades

Wet end rebuild 82
New $19-million fourdrinier and headbox upgrade at Champion International's Hamilton, Ohio, mill improves quality, output

High-consistency forming 92
While multi-ply board mills explore benefits, developers study expanded applications; technique is valuable for liquid packaging board mills

Vacuum systems 109
Centrifugal exhausters used as vacuum source for fourdrinier foils must be carefully analyzed and tuned to ensure trouble-free operation

Linerboard machine survey 145
New state-of-the-art forming and press sections offer faster machine speeds, increased sheet dewatering, and improved sheet strength

THE COVER

Tighter environmental regulations are prompting pulp and paper mills to explore new ways of analyzing emissions, including biomonitoring of effluent in receiving streams. This issue focuses on the future of water, air, and solid waste permitting at mills. **(Photo courtesy of Sirrine Environmental Consultants.)**

FOCUS: AIR/WATER QUALITY

Permitting in the future 59
Tightening of air, water, and solid waste regulations will mean process changes and permitting headaches for mills, as well as increased capital costs

PCB deadline 75
EPA has set an Oct. 1, 1990, deadline to reclassify or replace PCB transformers; each violation could result in a $25,000/day fine

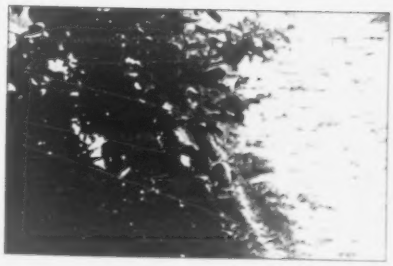
Material Safety Data Sheets 96
MSDS, the key element in identifying hazards associated with the use of chemical products, can be a full-time job for the paper industry

Reducing TOCl, dioxin 130
Trials at a Swedish softwood bleached kraft mill show that a new EO-stage enhancing process has environmental benefits and preserves pulp quality

FEATURES

PAPERMAKING

Water filters 111
Proper filter placement can help mills recycle water, improving effluent and limiting intake; optimum water reuse plan can help to minimize costs



PULPING

High-yield pulping 95
Sunds Defibrator's sixth annual technical seminar focused on use of TMP and CTMP

H_2O_2-enhanced bleaching 141
Bleaching strategy using hydrogen-peroxide-enhanced extraction stages helps reduce chlorinated organics

BLRB maintenance 168
Damage to black liquor recover boilers can be significantly minimized with the proper maintenance program

FINISHING/CONVERTING

Used lift truck checklist 153
Guidelines help mills make informed analysis of new vs used units to get maximum value for their investment

Mobile RF terminals 188
Units mounted on lift trucks boost inventorying, shipping efficiency at Sonoco's Newport, Tenn., mill

TRANSPORTATION

Waterborne transportation 158
Recent growth in the forest products industry has boosted the profitability of waterborne transportation

PULPWOOD PROCESSING

MOTAG-South meeting 166
Contract operation, landfill case history, woodyard traffic, expansion profile, safety among topics reviewed

MANAGEMENT

Strategic planning model 184
A planning model simulates a company's operations and indicates the optimum use of its resources

BEST COPY AVAILABLE

PULP&PAPER

EDITORIAL STAFF

ATLANTA
Editor in Chief Ken L. Patrick
Technical Editor Jim Young
Projects Editor Keily H. Ferguson

SAN FRANCISCO
Technical Editor Timothy A. Downs
Departments Editor Virginia C. Stefan

CHICAGO
Technical Editor Andy Harrison

BRUSSELS
International Editors Peter Sutton
John Pearson
Hugh O'Brian

NEWS STAFF

SAN FRANCISCO
Executive News Editor Willard E. Mies
Senior News Editor Debra A. Garcia
News Editor Carl P. Espe
News Editor Robert B. Galin

NEW YORK
News Editor Noel DeKing

PRODUCTION STAFF

SAN FRANCISCO
Managing Editor Margaret L. Brown
Art Director Nancy E. Bentley
Copy/Production Editor Mary A. Corbett
Copy/Production Editor Lowell B. Denny III

Atlanta: 2000 Powers Ferry Center, Suite 450 Marietta, Ga. 30067; (404) 952-1303; Fax (404) 933-0666
Chicago: 35 E. Wacker Drive, Chicago, Ill. 60601; (312) 372-6238; Fax (312) 372-3864
San Francisco: 500 Howard Street, San Francisco, Calif. 94105; (415) 397-1881; Telex 278273; Fax (415) 543-0256
New York: 370 Lexington Avenue, New York, N.Y. 10017; (212) 683-9294; Telex 220442; Fax (212) 725-0915
Brussels: Chaussée de Charleroi 123a, Boite 5, B-1060, Brussels, Belgium

PUBLISHING HEADQUARTERS

SAN FRANCISCO

Publishing Director Leigh M. Freeman
Group Publisher Leonard E. Haas
Director of Production Andrew A. Mickus
Director of Circulation Jerry M. Okabe
Ad Production Coordinator Gary A. Fong
Marketing Manager Paula J. Irons
Marketing Assistant Robin M. Connery
Editorial Secretary William S. McClanahan

Sales and business offices are listed on Advertisers' Index page

MILLER FREEMAN publications
A MEMBER OF THE UNITED NEWSPAPERS GROUP

Chairman of the Board ..... Clifford D. Jakes
President ..... Marshall W. Freeman
Senior Vice President ..... Charles C. Baake
Senior Vice President ..... Leonard E. Haas
Senior Vice President ..... Thomas L. Kemp
Senior Vice President ..... Wini D. Ragus
Vice President ..... Charles H. Benz
Vice President ..... Leigh M. Freeman
Vice President ..... Andrew A. Mickus
Vice President ..... Donald A. Pazour
Chief Financial Officer ..... Stephen A. Daniels
Treasurer ..... Miller Freeman III
Assistant Treasurer ..... Douglas M. Denny

APRIL

COLUMNS

From the Editors 7
by Noel DeKing
"Just say no" no defense against takeovers

Chemical Report 39
by Tim Downs
A bright future for calcium carbonate

Career Development 43
by Roberta Bhasin
Appraisal redux

Maintenance Management 45
by Christer Idhammar
Enhance maintenance performance

Quality Report 197
by Lars Ingman
Progress: six yards and a cloud of dust

Academia 243
by Kelly Ferguson
Open houses and scholarships

Comment 264
by Ian Donald
A matter of survival

DEPARTMENTS

Conference Calendar 47
News of People 201
New Products 211
Product Review 225
Literature 228
Bookshelf 235
Supplier News 237

SERVICES

Reader Service Review 205
Reader Service Card 207
Professional Service Directory 246
Classified Advertising 248
Advertisers Index 262

NEWS

Month in Statistics 9
U.S. paper and paperboard production data for January

Market Report 11
Mills joining June 1 newsprint hike
Box demand remains steady
Uncoated free-sheet prices boosted

Grade Profile 13
Uncoated free-sheet: Severe price discounting moderates as market demand improves

NEWS SCAN

GNN agrees to merger with G-P 23
Canadian industry profits tumble 25
Logging company plans mill 27
Alberni pulp mill in "jeopardy" 27
Bowater approves deinking plant 29
Stone plans Canadian machine 29
API sets recycling goal 29
New York projects recycling rate 31
James River defers mill 31
Niagara starts up PGW system 33
Simpson sets boiler project 33
Repap wins permit for conversion 33
CPU makes job security priority 33
Weyco to keep shipping line 35
IP to close Philadelphia box plant 35
Amcor buys shares of Sunclipse 35

International News 37
Europe continues consolidation
Saiccor plans expansion
Noranda, Hymac sign U.S.S.R. deal
Elders asset sale rumored

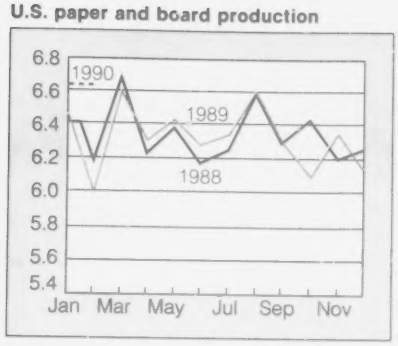
BEST COPY AVAILABLE

PULP & PAPER (ISSN 0033-4081), with which is combined *Paper Mill News*, *Paper Trade Journal* and *Pacific Pulp & Paper*, is published monthly except November when semimonthly by MILLER FREEMAN PUBLICATIONS, 500 Howard St., San Francisco, Calif. 94105. Second class postage paid at San Francisco and at additional mailing offices. POSTMASTER: Please send addresses changes to PULP & PAPER, 500 Howard St., San Francisco, Calif. 94105. © Copyright 1990 by Miller Freeman Publications Inc. All rights reserved. **Subscriptions & Address Change:** Sent without charge in the U.S.A. & Canada (upon written request) to individuals in pulp, paper, and board manufacturing firms and paper converting firms. To all others there is a subscription charge of $75.00 a year in the U.S. All subscriptions to other countries: US$90.00 a year, except Europe and Mediterranean, US$110.00 (air service included). Single copy, US$7.00, except Buyers Guide, US$35.00; 16mm microfilm, 35mm microfilm, 105mm microfiche, and article and issue photocopies are available from University Microfilms International, 300 N. Zeeb Rd., Ann Arbor, Mich. 48016, (313) 761-4700. Requests, subscription orders, and address changes must show name and position or job of individual, the name and location of mill, plant or office where employed, and the exact business or product produced at this location. Send subscription correspondence to: Circulation Department, PULP & PAPER, 500 Howard St., San Francisco, Calif. 94105, or call Subscriber Service at 415-267-7448. For address change, include label from recent issue.

ABP

BPA

U.S. paper and board production



U.S. production of paper and paperboard totaled 6.6 million tons in January, an increase of 2.2% over a year earlier, according to the American Paper Institute. Paper production for the month was at a seasonally adjusted annual rate of 39.3 million tpy, up 1.6% from the previous year. The seasonally adjusted rate for paperboard dipped to 38.1 million tpy, down 0.7% compared with January 1989.

Among major grades, newsprint production was up almost 10% in January, reflecting capacity additions from two new mills started up last fall. The trend rate for printing and writing paper continued flat, up 0.9% for the month to an annual rate of 22.8 million tpy. Growth of 8% to 9% in paperboard production for export was offset by a 2.2% decline in boxboard production for domestic use and just 0.2% growth in containerboard output for the U.S. market. Fiber box shipments were 1.3% lower in January than a year earlier, after adjusting for an extra day.

Canadian newsprint shipments totaled 715,000 metric tons in January, down 5.2% from a year earlier. Woodpulp shipments declined 3.9% to 613,000 tons. Operating rates stood at 92% for newsprint and 93% for woodpulp. ■

	Latest month (000 short tons)		% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
PAPER & PAPERBOARD PRODUCTION[1]					
Newsprint	Jan.	556	9.7	6,671	9.6
Uncoated groundwood (s)	Jan.	157	6.1	1,889	5.3
Coated paper (s)	Jan.	638	0.8	7,654	0.6
Uncoated free-sheet (s)	Jan.	972	1.0	11,662	0.7
Other printing/writing	Jan.	131	3.1	1,573	6.0
Total packaging and other paper (s)	Jan.	414	-9.0	4,970	-6.4
Tissue	Jan.	490	5.2	5,882	5.2
Total paper	**Jan.**	**3,358**	**1.9**	**40,300**	**1.9**
Unbleached kraft paperboard	Jan.	1,685	1.9	20,225	1.7
Semichemical medium	Jan.	490	-2.6	5,874	-2.0
Bleached paperboard	Jan.	384	1.3	4,613	0.0
Recycled paperboard	Jan.	725	-3.3	8,702	-2.9
Total paperboard	**Jan.**	**3,285**	**0.0**	**39,414**	**-0.1**
Total U.S. paper and paperboard output	**Jan.**	**6,643**	**2.2**	**79,714**	**0.9**
PULP, WASTEPAPER & FIBER[2]					
Total U.S. woodpulp production	Dec.	4,969	-5.9	62,023	1.4
Market pulp production	Dec.	648	-16.2	8,664	1.2
Wastepaper consumption at paper/board mills	Dec.	1,593	4.4	19,994	5.1
Pulpwood consumption (cords)	Dec.	7,936	-3.2	98,414	3.1
CONVERTED PRODUCTS STATISTICS[3]					
Corrugated box shipments (billion ft²)	Jan.	27.462	3.5	27.462[6]	3.5
Containerboard inventories at U.S. box plants and mills	Jan. 1	2,501	-2.0		
INTERNATIONAL TRADE[2]					
U.S. paper imports (including products)	Dec.	1,006	26.7	12,910	1.0
Imports of Canadian newsprint	Dec.	669	27.9	8,331[6]	n.c.
U.S. paper exports (including products)	Dec.	511	4.3	6,264	12.7
Exports of unbleached kraft linerboard	Dec.	197	6.5	2,217	3.6
Exports of woodpulp	Dec.	585	2.1	6,231	12.7
Norscan pulp inventories[4]	Jan. 31	1,422	62.7		
Norscan pulp operating rates[4]	Jan.	98%	86%	93%	92%
CANADIAN STATISTICS[5] *(reported in metric tons)*					
Total newsprint shipments	Jan.	715	-5.2	715[6]	-5.2
Operating rates	Jan.	92%	99%	92%	99%
Inventories held by U.S. consumers	Jan. 31	971	1.6		
Other paper/board shipments	Jan.	612	9.7	612	9.7
Woodpulp shipments (export only)	Jan.	613	-3.9	613	-3.9
Operating rates	Jan.	93%	89%	93%	89%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fibre Box Assn., Paperboard Packaging Council. 4. North American/Scandinavian paper-grade market pulp. 5. Canadian Pulp & Paper Assn. 6. Not annualized. (s) = Shipments.

BEST COPY AVAILABLE

Uncoated free-sheet: Severe price discounting moderates as market demand improves

Grade structure: No more than 10% mechanical pulp is used to make uncoated free-sheet (wood-free) paper. The balance is chemical (kraft) woodpulp. Excluded are uncoated groundwood, cotton fiber, bristols, and thin paper. Major end uses include business paper, such as stationery, reprographic, forms bond, tablet, and envelope, plus printing paper, such as offset, cover and text, and miscellaneous (such as technical, papeterie, or colored school).

Perhaps 50% to 60% of uncoated mills have converted to alkaline sizing to improve cost structure as well as provide longer lasting paper. Another trend has been bolstered by the solid waste management crisis. More than 30 companies have introduced recycled printing and writing grades, most based on preconsumer waste, though some mills use 10% to 20% deinked (or even nondeinked) postconsumer waste. Grades include copy and forms bond, stationery, cover and text, specialty paper and other office/school paper, and envelope paper.

Canadian mills have been increasing their role in this market, jumping from nearly no uncoated free-sheet a few years ago to just under 1.7 million short tons in 1990.

Production/capacity: At least half of the uncoated white paper produced in North America is converted into "business paper" for such uses as computer printers and copiers and single and multipart forms.

Overcapacity, high customer inventories, and an economic slowdown all contributed to a 2.1% decline in U.S. uncoated free-sheet production in 1989 compared with 1988. However, industry estimates call for a 5.0% increase in 1990. U.S. capacity will increase about 2.1% in 1989, according to the American Paper Institute.

New Canadian capacity (about 1.5 million tons) pushed up production levels by 14.6% in 1989 and will probably grow another 14.0% in 1990. Capacity will increase about 14.8% in 1990, according to the Canadian Pulp & Paper Assn. New capacity online in 1990 includes Willamette Industries Inc.'s greenfield mill in Bennettsville, S.C., (255,000 tpy) plus incremental increases at Great Northern Nekoosa Corp. in Ashdown, Ark., (80,000 tpy); Union Camp Corp. at Eastover, S.C. (50,000 tpy); and 58,000 tpy at Champion International's Quinnesec, Mich., mill.

Boise Cascade Corp. will start up its new 308,000-tpy machine at International Falls, Minn., in 1991, as will GNN at Ashdown (325,000 tpy), and Union Camp (240,000 tpy).

An additional 680,000 tpy will be added in 1992.

Outlook: These situations also caused weaker U.S. operating rates: about 91% in 1989 and possibly 93% in 1990. Canadian operating rates are pegged at 89% in 1988, 80% in 1989, and probably 80% in 1990.

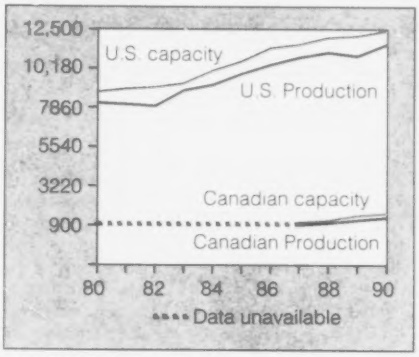
Demand should remain stable through the end of 1990. Imports are expected to remain even or decrease slightly this year.

Pricing: Mills announced price increases on forms, cut-size, and envelope paper to take effect in first- and second-quarter 1990. However, they were raising the published transaction prices rather than list prices. Market weakness had caused severe discounting in almost all grades (sometimes more than $100/ton) during 1989.

Price trends for two important grades are (year-end, $/short ton, list), book paper, No. 3 offset, 45-lb sheets: 1984, $880; 1985, $800; 1986, $850; 1987, $850; 1988, $1,020; 1989, $940. Forms bond, 15-lb rolls: 1984, $680; 1985, $600; 1986, $620; 1987, $760; 1988, $910; $830-860.

Markets: Subgrade market shares in 1990 (approximate): bond and reprographic—27%; mimeo and duplicating (MDX)—0.4%; forms—20%; offset printing—24%; envelope—11%; tablet—3%; carbonless—7%; other—7.6%.

SUPPLY/DEMAND (000 tons)



FORECAST (000 tons)

U.S.	1988[3]	1989[3]	1990e
Production[1]	11,277	11,043	11,595
Capacity[1]	11,853	12,149	12,403
Utilization rate	95%	91%	93%
Imports	592	586	580
Exports	83	100	118
Apparent U.S. consumption	11,786	11,529	12,057
lb/capita	26.48	27.08	28.32
GNP ratio	1.62	1.63	1.68
Canada			
Production[2]	1,023	1,172	1,336
Capacity[2]	1,153	1,457	1,672
Utilization rate	89%	80%	80%
Exports[2,4]	284	422	510
Canadian consumption[2]	728	707	734

e = *P & P* Estimate.
1. American Paper Institute; 1990 - *P & P* estimate. **2.** Canadian Pulp & Paper Assn. for 1988 & 1989. **3.** Revised. **4.** Over 90% shipped to U.S.

TOP NORTH AMERICAN PRODUCERS

	Annual capacity (000 short tpy)	Market share (%)
1. International Paper	2,100	14.9
2. Georgia-Pacific/GNN[1]	1,970	14.0
3. Champion International	1,114	7.9
4. Boise Cascade	910	6.5
5. James River[2]	872	6.2
6. Weyerhaeuser[3]	807	5.7
7. Union Camp	800	5.7
8. Mead Corp.[4]	520	3.7
9. Simpson Paper	450	3.2
10. P.H. Glatfelter	420	3.0
11. Domtar	350	2.5
12. Canadian Pacific	175	1.2

Market share of top five companies: **49.5%**
Market share of top ten companies: **70.8%**
Total North American capacity/yr (1990—000 short tons):**14,075**
Canada (est.): **1.672 short tons** U.S.: **12.403 million tons**

1. GNN agreed to buyout by G-P in February.
2. *P & P* estimate. **3.** Includes Prince Albert, Sask.
4. Includes carbonless basestock.
Sources: Company data; *P & P* estimates.

BEST COPY AVAILABLE

SALES AND EARNINGS

Canadian industry profits tumble in 1989

Canadian pulp and paper company profits plummeted 65% in fourth-quarter 1989 from a year earlier and were down 31.6% for all of 1989, according to a *Pulp & Paper Week* survey of results from 17 companies. This followed a 37% profit slide in the third quarter from a year earlier. The culprits continued to be a stronger Canadian dollar, weak newsprint markets, and higher wood costs in British Columbia. The Canadian dollar was about 4% stronger last year, averaging approximately US$0.85 to the Canadian dollar in 1989, compared with US$0.81 in 1988.

Most West Coast producers suffered less than their eastern counterparts, mainly because the pulp market remained firm through the year (at least for northern bleached softwood kraft). But the industry is bracing for further hard times, with pulp prices beginning to weaken and difficult labor negotiations slated for this month in eastern Canada. However, a few executives expressed hope that the rising Canadian dollar had finally begun to reverse and that newsprint prices were as close to the bottom as they would get.

Abitibi-Price Inc. suffered a 72% drop in profit on 1989 sales of $3.2 billion, down 1.4% from 1988. Included in the earnings report was a write-off of assets withdrawn, or about to be withdrawn, from production and employee severance costs related to restructuring. Before this C$31.2-million charge before taxes, net earnings would have been C$6.5 million for the fourth quarter, the company said. Newsprint sales were down 7% from 1988, and declining transaction prices offset a positive cost performance from the company's mills. The company announced a price hike for newsprint in February, although it is expecting 1990 to bring continued weak earnings for newsprint and groundwood paper. Abitibi does expect a rebound this year for coated paper.

Canadian Pacific Forest Products Ltd. cited weak markets in white paper, paperboard, and packaging products for a 32% slide in profits for 1989. CEO Cecil S. Flenniken said weakness in those markets and in newsprint was partially offset by continued strong demand in the pulp sector.

Not all companies suffered. Despite deterioration in the fine paper and market pulp areas during the second half, Domtar Inc. said operating profits for these businesses improved.

Canadian paper industry results.

	Fourth-quarter 1989 (C$000)				Full year 1989 (C$000)			
Companies	**Sales**	**Change %**	**Earnings**	**Change %**	**Sales**	**Change %**	**Earnings[1]**	**Change %**
Abitibi-Price Inc.	$800,900	−6.4%	$ (14,500)	nm	$3,257,700	−1.4%	$54,200	−71.6%
Canadian Pacific Forest Products Ltd.	na	na	na	na	2,900,000	−3.3	220,100	31.9
Canfor Corp.	242,400	0.7	13,900	−32.5	921,200	−15.0	96,400	−5.1
Cascades Inc.	175,787	17.1	3,431	−43.2	681,603	15.8	29,887	−27.3
Doman	166,585	nm	7,855	nm	485,753	60.6	31,887	57.6
Domtar Inc.	596,000	−6.4	(27,000)	nm	2,515,000	0.6	33,000	−70.3
Donohue Inc.	154,691	−10.4	9,237	−49.5	641,472	−1.1	44,250	−35.6
Fletcher Challenge Ltd.	341,700	−7.8	19,900	−56.6	1,402,800	−4.7	120,000	−33.4
MacMillan Bloedel Ltd.	786,700	−1.8	39,600	−45.9	3,273,700	0.0	246,700	−25.2
Malette Kraft[2] Pulp & Power	39,129	20.9	6,147	−2.0	—	—	—	—
Noranda Forest Inc.	1,252,000	7.9	27,000	−57.1	4,923,000	3.3	189,000	−28.1
Repap Enterprises Inc.	353,100	34.3	26,700	−11.3	1,221,800	18.8	93,100	0.3
Rolland Inc.	99,329	−10.3	(3,094)	nm	438,380	−1.5	(5,156)	nm
Scott Paper Ltd.	na	na	na	na	436,017	39.2	17,969	10.6
Tembec Inc.[2]	57,819	−3.4	6,067	−19.4	—	—	—	—
Weldwood of Canada Ltd.	177,400	−17.7	9,800	16.7	767,600	−14.2	65,400	5.5
West Fraser Timber	na	na	5,000	−15.3	550,000	18.8	28,400	−29.5
Total	**$5,243,540**	**2.0%**	**$125,043**	**−64.7%**	**$20,966,025**	**1.7%**	**$1,236,737**	**−31.6%**

1. Income after taxes, from continuing operations, excluding most significant nonrecurring items in both years.
2. First-quarter results ending Dec. 31. ( ) = losses. nm = Not meaningful. na = Not available.

Abitibi: Includes a C$31.2 million pretax charge from restructuring. **Canfor:** The company said 1988 and 1989 sales figures are not directly comparable because of changes resulting from the formation of Howe Sound Pulp & Paper Ltd. and Canfor-Weldwood Distribution Ltd., and the acquisition of Balfour Forest Products Inc. in mid-1989. **Doman:** Includes results of Western Forest Products Ltd. and Western Pulp Ltd. partnership from July 1. **Domtar:** Includes a C$35 million corporate restructuring charge and also reflects discontinued operations. **Fletcher Challenge Canada:** Total before extraordinary items, which include restructuring costs and writedown of Grande Cache, Alta., sawmill investment, offset by a gain on the sale of Western Forest Products Ltd. and tax credits. **Noranda Forest:** Results of Normick Perron are included for the last four months of 1989. **Rolland:** Includes writedown resulting from restructuring of the Mont-Rolland operations. **Tembec:** Unaudited results including recovery of income tax on prior-period losses.

BEST COPY AVAILABLE

though overall income tumbled 70% for 1989. Although profits fell 36% from last year, Donohue Inc. reported that net earnings of C$44.2 million was the second highest level ever achieved in the history of the Quebecor subsidiary. Fourth-quarter earnings were down 50%.

Citing firm pulp prices and increased coated paper shipment, Repap Enterprises Inc. reported a new high for revenues, up 34% for the fourth quarter and 19% for the year. Profits were up 0.3% to C$93.1 million for 1989. Nonintegrated fine paper producer Rolland Inc. saw a net loss of C$9.6 million after extraordinary items, citing the higher pulp costs.

MacMillan Bloedel Ltd. CEO Ray Smith called the company's 1989 earnings of $246.7 million "a good solid performance for the year." MB saw no change in annual sales from 1988 while watching profits drop 25% on the year and 46% for the quarter. The earnings reflect a strong pulp market and good results from lumber and containerboard, the company said.

Noranda Forest Inc. saw a 3.3% sales increase to C$5 billion. Earnings of C$189 million were down 28% on the year and 57% for the fourth quarter.

Fletcher Challenge Canada Ltd.'s net earnings were reduced by over $25 million by the Canadian dollar, the company said, as it finished 1989 57% below last year's fourth quarter and down 33% in profits for the year. FC also cited reduced newsprint prices and production interruptions related to modernization and expansion projects at mills in Minnesota and British Columbia as causes for the slide.

Fletcher's CEO Ian Donald said that he expects 1990 to be a difficult year, with some encouraging developments. With Blandin's new No. 6 paper machine coming up to capacity, "significantly increased volumes of lightweight coated paper will be produced during the year," he said. "Increased pulp production should also be achieved, as capital projects near completion."

Downtime and production problems at pulp and paper operations were reasons cited by Canfor Corp. for a fourth-quarter decline of 32.5%. Market pulp demand was strong throughout the year, the company said, but sack kraft markets weakened during the second half, and protracted startup problems at recently modernized sawmills seriously cut into wood products earnings. ■

MARKET PULP

Logging company plans CPGW market pulp mill

Orenda Forest Products Ltd. said it plans to build a new type of mechanical market pulp mill at a tidewater site near Stewart, B.C., for about C$144 million. The proposed mill will use a Tampella closed-loop, chemipressurized groundwood (CPGW) system that will place the mill among the most efficient and environmentally sound pulp operations in the world, the company said. Financing for the proposal is "under negotiations," said president and CEO Hugh Cooper from the firm's offices in West Vancouver, B.C.

The mill will be capable of producing 300 tpd of machine-dried pulp mainly for export to the Pacific Rim and for use in supercalendered and lightweight coated paper. The pulp is expected to have a freeness of 60 CSf and 75 brightness and "will fill a market not being served by flash-dried CTMP market pulps," according to a Tampella executive. In addition, he noted, the closed loop mill will have zero effluent.

The CPGW system will use alkaline peroxide in the grinder hot loop to achieve first-stage bleaching, which will be followed by a second bleaching stage. A similar CPGW system was recently started up at Niagara of Wisconsin, and about four other integrated U.S. printing/writing paper mills have installed regular PGW systems in recent years. H.D. Reins & Associates of Oregon City, Ore., will provide consulting engineering for the British Columbia project.

Orenda said the process also allows the mill to use short-length pulp logs. Because of the increased efficiency and handling capabilities expected at the Orenda mill, more saw logs could be salvaged and less timber will be left on the ground. Under terms of a renewable 20-year forest license, Orenda holds timber rights to about 250,000 acres of decadent woodlands in the Kalum timber supply area of northwestern British Columbia. To ensure necessary fiber supply for the planned pulp mill, Orenda has prepared an application for an additional 100,000 m^3 of annual quota.

Orenda Forest Products, a Vancouver Stock Exchange-listed company formerly known as Asitka Resources Corp., originally proposed to build a 700-tpd thermomechanical market pulp mill. ■

MB says Alberni pulp mill in "jeopardy"

MacMillan Bloedel Ltd. told employees recently that its Port Alberni, B.C., kraft pulp mill is in "serious jeopardy" due to a combination of land use threats, anticipated capital requirements of $120 million to meet environmental standards over the next two years, and changing market conditions.

"Barring unexpected changes, we will have to discontinue our bleaching operations before 1992, when new regulations regarding chlorinated organics become effective," MB Alberni region vice president Dale Tuckey said.

The kraft mill, which employs about 200 people, has operated since 1947. It is comparatively small, producing about 500 tpd of unbleached and semibleached kraft pulp.

Tuckey said the company thought it had a solution last year in the planned conversion of the mill to production of fully bleached kraft pulp. Several factors, however, now appear to make that plan untenable, he said. Foremost among those factors is the $120 million that would be required for the mill to meet pollution standards that will be in effect by 1992.

The other major factor is uncertainty about the fiber supply in the Alberni region. About one third of the region's annual allowable cut is in dispute, with the looming possibility of substantial withdrawals.

As a result, MB has decided to place a hold on the $120-million investment, which mainly affects the bleach plant supplying semibleached kraft pulp to the mill's newsprint machines. The company has told customers that no decision has been made concerning the future of the kraft mill or production of market unbleached kraft pulp. ■

NEWSPRINT

Bowater approves deinking plant

Bowater Inc.'s directors have approved construction of a new newsprint deinking plant adjacent to its Calhoun, Tenn., newsprint mill. The new plant is expected to cost about $75 million and will supply 300 short tpd of recycled fiber to Bowater's existing newsprint mill.

The company originally had announced plans to install an old newspaper (ONP) recycling facility at one of its mills in mid-1989, and preliminary engineering was started in September. Studies found the Tennessee mill was the best location to site a first recycling operation. Additionally, the study established that the best economies of scale lay in a single, nonexpandable line to which additional lines can be added in the future.

According to the company, the 300 tpd of recycled pulp will allow the Calhoun mill, which has an annual newsprint capacity of 790,000 tons, to market up to one third of its productive capacity as newsprint that meets the federal government's definition of 40% recycled content. Greater volumes of recycled ONP will be available if the blend percentage averages less than 40%, the company said.

The plant will use both washing and flotation systems of deinking to process ONP printed with letterpress, offset, or flexographic inks. It will also recycle some coated magazine stock to deliver a pulp blend of about 70% old newsprint and 30% old magazines. Startup is set for December 1991. ■

Stone plans Canadian recycled newsprint machine

Stone-Consolidated Inc., a unit of Stone Container Corp., said in March the company intends to have recycled newsprint capacity in Canada by the end of 1991. This will not result in a short-term capacity increase, a statement said. Management has not yet determined a specific site nor a specific capacity. The company makes newsprint at Port Alfred, Shawinigan Falls, and Grand'Mére, Que.

Over 44% of Stone's 1.3 million metric tons of newsprint capacity is already made from recycled fiber. The company uses substantial quantities of recycled fiber at its Snowflake, Ariz., and Ellesmere Port, U.K., newsprint mills. Increased capacity and other issues have delayed some other Canadian recycled newsprint projects, though U.S. mills plan to move ahead with their plans. ■

WASTEPAPER

API sets recycling goal, releases key study

The American Paper Institute announced late in February a new national recycling goal for the industry. By 1995, noted API, U.S. mills aim to recover and reuse 40% of all the paper consumed in the U.S. API also released key findings of a study on wastepaper supply/demand trends through 1995 done for the association by Franklin Associates Ltd. The report indicated, among other things, that achieving a 40% recycling goal by 1995 will bring collection rates for the major wastepaper grades (other than mixed paper) to what may be their practical maximum levels.

"Reaching this goal is dependent on recovering 40 million tons of wastepaper in 1995, a 50% increase over 1988 levels," noted Red Cavaney, president of API. "It will require the cooperation of the public sector, and the participation of tens of millions of citizens, in order to expand collection systems."

Wastepaper supply will be the principal limitation to ongoing growth in the rate of wastepaper consumed after 1995, the Franklin report said. In five years, the combination of wastepaper demand in the U.S. paper industry, exports, and all other uses will lead to consumption of all wastepaper that can be reasonably recovered in usable condition, except for mixed paper.

Franklin projects a U.S. recovery rate in 1995 of 38.5% to 41.7% of new supply, which will generate enough recyclable paper to balance projected demand. Practical maximum recovery rates by major grade category are estimated at 63% to 68% for corrugated, 50% to 55% for newsprint, 50% for high-grade deinking paper, 100% for pulp substitutes, and 15% to 25% for mixed paper.

Promoting public recycling efforts. API also is creating a national database system, MatchMaker, to help communities that have wastepaper to sell or want to set up recycling programs and identify recycling mills and wastepaper dealers. This will include the development of a national paper recycling directory. In addition, the association will sponsor a national public education program to promote recycling awareness and the collection of high-grade wastepaper, sorted by grade, and will develop "how-to" tools dealing with source separation and collection programs.

Over the next three years, API expects wastepaper consumption by U.S. paper mills to grow at twice the rate of virgin fiber. Thirty-seven expansions, including eight new mills that involve wastepaper furnish, are currently being built or have been announced. Many more projects are in the planning stages, according to API.

Substantial deinking investment. North American newsprint producers have been the biggest spenders on recycling capacity in recent months. An estimated $1.1 billion will be invested through 1995 to install deinking capacity. Consumption of old newspapers (ONP) by this sector alone is expected to increase by over 1 million tons between 1988 and 1995, a 71% jump during that period. API expects that the projected increase in Canadian recycled newsprint capacity will account for at least 700,000 tons of ONP exports from the U.S. by 1995.

The recovery of old corrugated containers (OCC) is expected to reach 18.8 million tons in 1995, compared with 12.4 million tons in 1988, a 51.6% hike. Over the same period, growth in containerboard new supply will increase at less than half that rate, 19.8%. The recovery of OCC will be approaching its limits of 60% to 65% by 1995 using present techniques, noted the Franklin report.

Pulp substitutes, on the other hand, are already constrained, while the demand for these prime waste-

paper grades is virtually unlimited. "The projection of demand can be construed to be at 100% recovery," noted Franklin. In 1988, recovery was 3.5 million tons; by 1995, recovery will be at an estimated 4.0 million tons.

Deinking grades are in high demand and in limited supply as well, although there is potential to upgrade mixed paper to a deinking grade by labor or mechanical means. In 1988, the recovery of high-grade deinking paper was 2.6 million tons; in 1995, the recovery is projected at 4.4 million tons, or 50% of the available supply.

The nation's potential ability to collect mixed paper, on the other hand, will probably exceed the ability to use and export these grades by 1995, noted Franklin. Wastepaper exports would reach 11 to 14.2 million tons by 1995, assuming that the growth in paper and paperboard consumption in the rest of the world is at least 2.5% a year from 1988 to 1995, according to Franklin's projections. The average recovery rate for all countries other than the U.S. will edge up from 35.3% in 1988 to about 36% in 1995. ■

New York projects 65% recycling rate

A report recently released by the New York State Newspaper Recycling Task Force has found that a 65% newspaper recycling rate is possible in the U.S. by the year 2000. By that time, New York State publishers say they will voluntarily use recycled newsprint for at least 40% of their total newsprint requirements.

The report, the result of several months of study, was done to find "realistically attainable" levels of recycled newsprint manufacturing capacity and to investigate the steps necessary to encourage investment in new or expanded recycled newsprint facilities. The study concludes that using old newspapers as a fiber for newsprint is technically and economically feasible and that a 65% recycling rate by 2000 is achievable particularly if mandatory collection programs are continued.

Meanwhile, recommendations released by a Connecticut task force studying ways to promote greater use of recycled newsprint within realistic market constraints call for overturning a 1989 state law. The American Newspaper Publishers Assn. (ANPA) strongly supported the findings of the task force. A bill has been drafted and is pending in the state legislature in Hartford.

The task force called for newspapers to gradually increase recycled fiber content in newsprint to 50% by 1999, while the present law mandates that newspapers make 20% of their newsprint consumption from recycled-fiber newsprint by 1993 and increase the amount of recycled-fiber consumption to 90% by 1998.

• Spurred by concern over Chicago Ill.'s bulging landfills, Edward Burke, an alderman from the city's 14th Ward, has proposed an ordinance requiring all packaging on products sold in Chicago to be recyclable by 1992. The new law, which would affect paper as well as glass, wood, and metal, would also set goals for using recycled newsprint. The ordinance would require all newsprint consumers to use 30% recycled fiber newsprint by 1993 in 15% of their product. That would increase to 40% in 1995 and to 50% in 1996. ■

Total wastepaper consumption, 1988-92 (000 short tons).

	1988	1989[1]	1990[2]	1991[2]	1992[2]
Total all grades	**19,886**	**20,878**	**22,570**	**23,740**	**24,982**
Total paper	**5,650**	**5,960**	**6,596**	**7,087**	**7,397**
Newsprint	1,431	1,498	1,754	1,831	1,965
Printing, writing, and related	1,416	1,447	1,517	1,608	1,635
Packaging and ind. conver	265	253	253	255	259
Tissue	2,538	2,762	3,072	3,393	3,538
Total paperboard	**13,371**	**14,034**	**15,021**	**15,671**	**16,594**
Kraft, bleached, and unbleached	2,042	2,311	2,694	2,830	3,035
Semichemical	1,845	1,935	2,063	2,093	2,294
Recycled corrugating	2,081	2,165	2,343	2,436	2,483
Other recycled	7,403	7,623	7,921	8,312	8,782
Construction paper & board	**885**	**884**	**953**	**982**	**991**

1. Estimated actual consumption.
2. Estimated consumption of full capacity operations.
Source: API Capacity Survey, 1989.

EXPANSION/MODERNIZATION

James River defers mill, looks at recycled project

James River Corp. has indefinitely deferred plans to build an integrated pulp and coated board mill in Michigan's Upper Peninsula. However, it is considering adding a 100,000-tpy recycled fiber mill on the West Coast. The fiber would be used for the towel and tissue business and for communication paper at existing locations.

Thomas Myers, vice president-corporate development, said the company had been studying construction of an integrated board mill, perhaps with production of chemi-thermomechanical pulp. Pulp production would have been about 1,000 tpd.

The site of about 1,200 to 1,800 acres is very suitable for pulp and paper mills, according to local studies, Myers said. The area has been hard hit by a decline in mining.

Greenpeace USA issued a statement claiming that the opposition by community and environmental groups helped to sink the project, particularly in regards to dioxins produced through bleaching. Myers said the project had not gotten to the environmental study stage. He added that the decision was based on where best to spend the company's financial resources.

"We feel an environmentally suitable mill can be built up there," Myers said. "We are committed to having no detectable dioxin in our products."

In addition to the possible West Coast recycled fiber mill, James River plans to spend money for the previously announced doubling of capacity at the James River-Marathon Ltd. bleached kraft pulp mill in Marathon, Ont. ■

BEST COPY AVAILABLE